



**OFFICIAL REPORT**  
AITHISG OIFIGEIL

# Net Zero, Energy and Transport Committee

**Thursday 27 April 2023**

**Session 6**



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**NET ZERO, ENERGY AND TRANSPORT COMMITTEE**  
**14<sup>th</sup> Meeting 2023, Session 6**

**CONVENER**

\*Edward Mountain (Highlands and Islands) (Con)

**DEPUTY CONVENER**

\*Fiona Hyslop (Linlithgow) (SNP)

**COMMITTEE MEMBERS**

\*Jackie Dunbar (Aberdeen Donside) (SNP)

\*Liam Kerr (North East Scotland) (Con)

Monica Lennon (Central Scotland) (Lab)

\*Ash Regan (Edinburgh Eastern) (SNP)

Mark Ruskell (Mid Scotland and Fife) (Green)

\*attended

**THE FOLLOWING ALSO PARTICIPATED:**

Jeremy Allen (United Kingdom Government)

Andrew Bowie MP (Parliamentary Under-Secretary of State for Energy Security and Net Zero)

Maggie Chapman (North East Scotland) (Green)

**CLERK TO THE COMMITTEE**

Peter McGrath

**LOCATION**

The Mary Fairfax Somerville Room (CR2)



## Scottish Parliament

### Net Zero, Energy and Transport Committee

Thursday 27 April 2023

*[The Convener opened the meeting at 14:00]*

### Decision on Taking Business in Private

**The Convener (Edward Mountain):** Good afternoon and welcome to the 14th meeting in 2023 of the Net Zero, Energy and Transport Committee.

We have apologies from Monica Lennon and Mark Ruskell. I welcome Maggie Chapman, who joins us for the meeting. We are delighted to have you here and, in line with convention, I will give you the opportunity to ask your questions once committee members have asked theirs.

The first item is a decision on taking business in private. The committee is asked to consider whether to take item 3, which is consideration of the evidence that we will hear under item 2, in private. Do members agree to take item 3 in private?

**Members** *indicated agreement.*

## Electricity Infrastructure Inquiry

14:00

**The Convener:** Our next item of business is an evidence session as part of our inquiry into Scotland's electricity infrastructure: inhibitor or enabler of our energy ambitions.

On 21 March, the committee held its first evidence session with energy industry stakeholders and experts. We then heard from the Office of Gas and Electricity Markets, the statutory regulator for electricity markets in Great Britain. Since then, we have held an informal online event with energy entrepreneurs, which was really useful, and on Monday some committee members were in Glasgow and at Whitelee wind farm as guests of Scottish Power.

Today we will explore the intersection of devolved and reserved responsibilities in relation to Scotland's future electricity infrastructure and I am pleased to welcome Andrew Bowie MP, the Minister for Nuclear and Networks at the Department for Energy Security and Net Zero in the United Kingdom Government, and Jeremy Allen, director of the energy portfolio office at the Department for Energy Security and Net Zero in the UK Government.

Thank you, Andrew, for accepting our invitation. We are delighted to have you here. I understand that you want to make an opening statement.

**Andrew Bowie MP (Parliamentary Under-Secretary of State for Energy and Net Zero):** Thank you, Sir Edward. It is a pleasure to be back in the building and to be appearing in front of your committee. I thank you for inviting me to this meeting, not only because it allows me to answer your questions on the direction of travel of the UK Government's energy policy and the intersection between devolved and reserved responsibilities, but because it allowed me to have a constructive meeting with Scottish Government colleagues this morning to discuss the Energy Bill, which received its third reading in the House of Lords on Monday and was introduced to the House of Commons on Tuesday.

The Energy Bill is the largest and most substantive bill in the past 16 years, and I am delighted that it has received cross-party support, including from the Scottish Government. However, there are slight creases that need to be ironed out and I look forward to working with all stakeholders as we move forward.

As I am sure you know, alongside taking the bill through Parliament, my responsibilities cover the grid, connectivity, nuclear and fusion. I want to say at the outset how much I and the Department for

Energy Security and Net Zero welcome the draft energy strategy and your just transition plan. It is clear that we are on the same page on many of the issues.

Renewables are desirable because they offer cheap and secure energy, not just zero carbon energy, and cheap, clean and secure energy matters because we need to keep the lights on and because it is the engine of economic growth. Fossil fuels are at the mercy of global energy markets and vulnerable to bad actors such as Vladimir Putin, as we have seen in the past year. Even though the UK was never dependent on Russian fossil fuels, and we have now banned their import entirely, the Ukraine invasion directly impacted our energy bills. Weaning ourselves off fossil fuels will be a massive change and challenge for the UK, and your inquiry rightly highlights that, in order to build this energy future, a lot of difficult and sometimes unglamorous delivery of new networks, infrastructure and market systems needs to happen.

Using wind and solar most effectively will require us to be able to utilise and store excess energy when the weather is unfavourable, and to bring in other sources when it is not. A big theme of your inquiry is growing investment in the deployment of hydrogen battery storage and carbon capture, use and storage. In our recent “Powering Up Britain” set of publications, we committed to putting the policy framework for large-scale, long duration storage in place by 2024, and we are also facilitating its deployment through the smart systems and flexibility plan jointly with options. Our flagship policy for the deployment of renewables remains contracts for difference; the contracts have been highly successful and world-leading.

The key to maintaining a secure base-load of energy is, of course, nuclear. Many of the stations in our existing fleet are close to the end of their lifespans. To replace and extend that capability, the first nuclear power station in a generation is under construction at Hinkley Point C, which is an incredible project—I visited it just last month—with a groundbreaking investment of £700 million in Sizewell C in partnership with EDF. We have established Great British Nuclear to deliver our nuclear programme, and as the first ever nuclear minister for the UK, I am particularly proud of that.

I would say that the overlap between the respective strategies of the UK Government and the Scottish Government reflects a reality that the strategic landscape for energy is now well developed and maturing. We have produced a series of publications over the past few years that have refined it in successive detail, and we are now into the granular detail of overcoming delivery

barriers. For example, our review of electricity market arrangements is making good progress.

Net zero and energy security are two sides of the same coin. We have the strategic approach. Now it is up to the Scottish Government and UK Government to focus on delivery.

Now, Sir Edward, I am in your capable hands.

**The Convener:** We will see at the end of the meeting whether you stick to that belief. The first questions will come from Liam Kerr.

**Liam Kerr (North East Scotland) (Con):** Andrew Bowie, you talked about contracts for difference and their importance in stimulating and moving forward with renewables. The UK Government has recently launched a consultation on the contract for difference regime and my understanding is that there is a feeling in Government that it would be better to move from a straight consideration of bid price to incorporating other factors—such as supply chains, filling skills gaps and innovation—when bids are made for such contracts.

What are the benefits of a shift to such a regime and what are the risks?

**Andrew Bowie:** I cannot speak to the outcomes of a consultation that is on-going. Obviously, the Government response to the consultation will come at the end of the process.

However, you are absolutely right about the importance that contract for difference has had in stimulating growth and investment in renewables. It is held up by industry across the world as being one of the best schemes on offer around the world, in relation to countries that are serious about investing. If you compare it to what is happening in the United States of America, France or Germany, you will see that we are punching well above our weight. As a result of the CFD scheme, we have the first, second, third and fourth largest offshore wind farms in the world off the coast of Great Britain.

Speaking in the round, without wanting to prejudice the outcome of a consultation, it is absolutely essential, if we are serious about ensuring the future of clean, green renewable technology in the United Kingdom—be that in Scotland or elsewhere—that we have a UK-based supply chain so that we are not at the mercy of international markets, and that we have that skilled workforce at our fingertips. We are in a global competition for labour and materials, and it is really important that all those factors are taken into account when it comes to investing in future renewables technology.

As I said, I cannot get too much into the detail of a consultation that is on-going, because the Government will come to its view when that

consultation has run its course. However, all those factors are central to how we will approach investment in renewables.

**Liam Kerr:** I appreciate that you will not talk about an on-going consultation, but the Government must have horizon scanned and thought about the possible outcomes of changing regimes. You have talked about some of the benefits that might arise from changing regimes in relation to skills and the supply chain, for example, but could there not be a counterview that, by changing the regime, you would make projects more expensive and thus reduce the incentive for renewables?

**Andrew Bowie:** The consultation is running and I do not want to be in a position where I even suggest that there may be a change of regime because, when the consultation comes back, we could decide not to change the regime. I do not want to put any suggestion in people's minds that we are minded to change the regime in the immediate term.

We have just launched round 5 of the CFD scheme, which is subject to all the procedures that were in place for rounds 1 through 4, albeit that it is taking in new and emerging technologies, such as tidal.

Of course, thought would have to be given to any negatives when it comes to responding to the consultation. It could well be that the consultation proves that any change to the regime would prove to be a disincentive to investment in new renewables. Should that be the case, the Government will have to take a view on whether the benefits—through investment in a UK-based supply chain to ensure that there is some investment in skills, working with universities, or whatever that looks like—outweigh those negatives.

However, as I said, we are not in the position right now of changing the scheme. As we have seen through this committee's work, our work and the work of the Scottish Government and the Welsh Government, there is an acknowledgment that because of the lack of a UK-based supply chain at the minute, the pressure on a small skilled workforce and the necessity of ensuring that all those pillars are in place to build a successful, sustainable and renewable energy industry in the UK, we should possibly consider that change as part of the process, which is why a consultation was launched, but absolutely no decision has been taken.

It could well be that no decision is taken to change from the current regime, but it is important that we consult on all the options.

**Liam Kerr:** Without prejudging, let us look at the potential positives. You talked in your opening

remarks about the importance of storage; you talked about batteries and hydrogen as storage mechanisms. If those changes to the contracts for difference regime were to come to pass, might such changes provide a better route to market for storage mechanisms such as hydrogen? In any event, what is the UK Government doing to incentivise the development and rolling out of such storage opportunities?

**Jeremy Allen (United Kingdom Government):** We absolutely want to bring forward so-called flexible technologies that complement an increasingly renewables-based electricity system. We will have to look at the individual technologies within flexibility plans on their merits and economics to work out the most appropriate way to make them commercial and allow them to compete in the market.

At the moment, some forms of flexibility such as batteries can enter the capacity market. We are signalling that other forms such as hydrogen may need a more tailored business model that will allow those early-stage technologies to come to market and prove themselves commercially in the way that the CFD regime did five or 10 years ago with forms of renewables.

We also have a regime to bring forward interconnection with continental Europe as a form of flexibility. We will take different forms of flexibility case by case, on their merits, and consider what the right regulatory frameworks and business models are to bring those technologies to the fore, because we want them to be a significant part of our system.

**Liam Kerr:** My final question at this stage is on something that Jeremy Allen just brought up. You mention the capacity market in the context of storage. As I understand it, the UK Government proposes changes to the capacity market that would include or better incentivise what we might call flexible technologies to better allow them to compete in capacity market auctions. The committee has heard that small and medium-sized enterprises that produce batteries might find it difficult to enter that market. Will the proposed changes to the capacity market assist in that entry, and if so, how?

**Andrew Bowie:** We are still considering the best approach to that. Obviously, we do not want to do anything that prevents development of technologies, especially considering the groundbreaking work that is being done by SMEs. In fact, that was a point of discussion this morning with Scottish Government officials, and it is something that officials have been commissioned to look into on my behalf.

We want to look at how the capacity market operates and whether it delivers what we need it

to deliver for the ambitious targets that we have set. We do not want to, by quirk of drafting or whatever, put off companies from continuing to develop these new technologies. All that will be taken into consideration, but no decision has been taken yet. As I said, it is still very much at the stage of official-level discussions. In terms of ministerial discussion on the issue, we are not very close to making a decision.

**Ash Regan (Edinburgh Eastern) (SNP):** What role does the UK Government envisage for hydro power in the future energy system?

**Andrew Bowie:** We will need a wide range of technologies for our energy base-loads. That can be seen through our investment in offshore wind, onshore wind and nuclear and the fact that we have ring fenced £10 million from the current CFD option process for tidal power. All those energy sources, including hydro, will be part of a wider mix when it comes to developing the system and moving us away from our reliance on fossil fuels.

14:15

**Ash Regan:** You mentioned the Scottish Government's draft energy strategy, and I believe that you welcome some of the content in it. You will probably be aware that there was a request in there to

"provide appropriate market mechanisms for hydro power to ensure the full potential of this sector is realised".

Do you broadly support that request, and if so, what work is being done to support investment in it?

**Andrew Bowie:** In answer to the first part of the question: yes, we absolutely do support it. Secondly, discussions are on-going right now between officials at the Department for Energy Security and Net Zero and Treasury colleagues as to how best we can create a framework to deliver hydro technology to market. The discussions are at an early stage, and I do not foresee that any announcement will be made in the immediate future, but they are under way. Although it does not fall directly into my portfolio, it does in the wider conversation about the grid and the wider energy mix, and I am keen to see us move forward and support those nascent technologies.

**Ash Regan:** The idea of what is immediate can mean different things to different people. Can you put any timeframe on that—will it happen this year, or do you see it being more something for next year?

**Andrew Bowie:** I can write to you with further information on what the timetable might be. I do not have that information at my fingertips, but I am happy to give you more information on it.

**Ash Regan:** That would be great.

**Fiona Hyslop (Linlithgow) (SNP):** Welcome to the committee, minister. Hydro is obviously not a nascent issue.

**Andrew Bowie:** No, it is not nascent; it is decades old.

**Fiona Hyslop:** We have had hydro for a long time, and, as you will be aware, there are significant proposals for its expansion in Scotland that are being held up. You said that talks are going on, but the proposals are being held up. Is there an understanding of the need for pace—which we heard about from your colleague—and flexibility to ensure that we have access to this fantastic resource?

**Andrew Bowie:** Absolutely. I suggest that having a Scottish MP in the department lends itself to moving things on faster than would otherwise be the case, because it is quite clear—given the proximity that we all have to the amazing possibilities for the development of hydro at scale—that these things should move forward.

There is an acknowledgement—as there is for investment in all the technologies that we are speaking about—that we need to move forward faster. There is a requirement to do that. We need Scotland to reach its net zero target by 2045 so that the UK can reach its net zero target by 2050, because the two targets are interlinked. That will involve further investment in all the technologies, and pace is a major consideration in the discussions. However, we also have to work within the art of the possible, and we are working on a range of different areas. It is certainly an area in which we are keen to move forward as fast as we possibly can.

**Fiona Hyslop:** I am sure that you are, but the Treasury is making the decisions. What does it need to speed up its decision making?

**Andrew Bowie:** As I said to Ms Regan, I will write with more information on that. Any pressure that the committee could bring on this—or on any issue, for that matter—would be most welcome.

**The Convener:** That is an interesting thought.

**Jackie Dunbar (Aberdeen Donside) (SNP):** Good afternoon. Support for green hydrogen in the United States and the European Union is being ramped up, and everybody would agree that we have to ensure that the UK does not lose its competitive advantage. What work is being done to ensure that any existing competitive advantage that we have in hydrogen is maintained and enhanced?

**Andrew Bowie:** We think that hydrogen is one of the key solutions for getting us to our net zero target by 2050. In the Energy Bill, which I have in front of me, we are legislating to allow for hydrogen village trials. We are also legislating for

the regulation of the transport and storage of hydrogen.

It is the United Kingdom Government's ambition to deliver up to 10GW of low-carbon hydrogen production capacity by 2030, at least half of which will come from electrolytic hydrogen, drawing on the scale-up of UK offshore wind or renewables and, indeed, new nuclear capacity. We are putting a lot of emphasis on this.

As we saw in the "Powering Up Britain" announcement, we are supporting hydrogen projects across the United Kingdom. It is an area of technology that is not without controversy, as some people dispute that hydrogen for heating will ever be effective or cost-effective, for example. Therefore, we are legislating for these trials to go ahead so that we can prove whether the technology actually works at scale, is affordable and might complement some of the other ways that we are seeking to heat homes and businesses in the future. Germany is making huge strides forward, and we are determined to do exactly the same.

This is a starting point. We know what the end point needs to be, so we are investing a lot of time and money in hydrogen. Some of the developments are very exciting. For example, although not without controversy, should they be successful, the village trials will really be the moment at which we will be able to see hydrogen coming through from a heating and domestic use perspective.

**Jackie Dunbar:** What is the UK Government doing to develop a regulatory regime for hydrogen production and storage? Do you have a timescale for that?

**Jeremy Allen:** The bill that the minister referred to, which is in the House of Commons, is creating the regulatory framework for the production of hydrogen, and we are keen to see that move through the parliamentary process. It provides a clear regulatory framework against which we are also providing Exchequer funding—and, in time, funding via the consumer bill—that matches an incentive to bring forward production against a clear regulatory framework in which operators have the confidence to invest.

**Andrew Bowie:** Without the regulatory framework that the bill establishes, we would not be able to pursue any of the exciting developments that are being talked about, so the bill is key. That is one of the reasons why there is such broad cross-party support for the bill.

**Jeremy Allen:** We have the electrolytic allocation round, and we will decide on the first one towards the end of this year. In "Powering Up Britain", we announced that we will run a second round of electrolytic allocation. There will be

significant funding behind that to really ramp up production in advance of the 2030 target that the minister mentioned.

**Jackie Dunbar:** You said that, in order for the UK to meet its net zero target by 2050, we need to meet our target in Scotland by 2045. The committee has heard that carbon capture and storage is vital for enabling us to—I think that you know what is coming, because you have your arms crossed.

**Andrew Bowie:** Oh, no—sorry.

**Jackie Dunbar:** It is vital that we get it, but the Climate Change Committee has said that we do not have the necessary powers in Scotland to get there. When will the Scottish CCS cluster receive the required support from the UK Government so that we can—

**Andrew Bowie:** Is that the Acorn cluster at Peterhead?

**Jackie Dunbar:** Yes.

**Andrew Bowie:** Acorn has received £40 million of UK Government support, to date, to move the programme forward. It was, as you know, the reserve for track 1. In March, we announced the track 2 process, for which Acorn is the leading contender. I would be overwhelmingly delighted should Acorn be successful through the track 2 process—

**Jackie Dunbar:** As I would be.

**Andrew Bowie:** —but we have to let that process take its course. We have announced it. It is still our stated ambition to have track 2 up and running by 2030, and, as you said, it is vital to Scotland's 2045 net zero ambition and the UK's 2050 net zero ambition that we get more carbon capture and storage on stream across the whole of the United Kingdom. We have seen the track 1 developments moving forward in an incredibly positive way, and it would be brilliant to see Acorn do the same. However, that needs to be subject to the track 2 process that we are working through. I am delighted that we have started to move that forward.

**Jackie Dunbar:** May I push you a bit on that?

**Andrew Bowie:** Of course you can.

**Jackie Dunbar:** Do you have a timescale for that? It is good to hear that it is now part of the track 2 process, but when will we see that up and running?

**Andrew Bowie:** There will be an update for all parties in the summer.

**Jackie Dunbar:** Okay. Thank you.

**The Convener:** Nice try, Jackie. I am not sure that you are going to get any further than that.

Minister, just before we leave hydrogen, it seems from the briefings that I have received that one of the problems with hydrogen is that you lose a lot of electricity—up to 30 or 40 per cent—from changing electricity into hydrogen and then have quite a high loss when you convert that back into electricity. There is also the issue of moving hydrogen around, which cannot necessarily be done in the gas network that we have. The committee has had some evidence that it can be done but only if it is diluted in the gas that is going round. How do you envisage the Government encouraging people to develop the technology to minimise losses and make the transmission of hydrogen around the UK easier?

**Andrew Bowie:** The regulatory framework for transmission is included in the Energy Bill, so all of that will be covered there. However, you are absolutely right about investment in the network. National Grid Gas's project union, which is about safely improving the network so that it can deliver hydrogen across the UK in the future, is under way right now. That is a National Grid Gas project in which we take a keen interest.

You are right in saying that there are questions about whether hydrogen is viable. That is why we are legislating to enable the trials to take place and supporting the work of National Grid Gas to consider what it needs to do to make the network safe.

There are concerns, and we need to address all of them in the round. That is why we are taking all the action that we have spoken about so far. We share the concerns about the loss when hydrogen is converted, about diluting and about the safety frameworks that we have in the grid. Those all come into the discussion when we are talking about what we are going to do if hydrogen is to be a part of the mix moving forward.

**The Convener:** If the gas pipeline network is to be used to transmit hydrogen, it will have to be transferred from a metal piping system to a poly piping one, for lack of a better description. I am interested in whether the Government is planning how it can assist in driving that transfer.

**Andrew Bowie:** We are fully supportive of what National Grid Gas is doing and the investment that it is making alongside the hydrogen industry. They are obviously keen on—just as we are supportive of—ensuring that it is safe, deliverable and cost effective. Those discussions continue, and approaches to the Government for support in that regard will be looked at on merit as they come in.

**The Convener:** If the existing infrastructure that we have for gas transmission cannot easily be converted for transmitting hydrogen, does that mean that there will be an important future for gas across the United Kingdom?

**Andrew Bowie:** There will be an important future for gas. I do not know what the statistics are for today, but, on some days, gas is responsible for 55 to 60 per cent of our overall energy base-load right now, in 2023. Therefore, there will be an important role for it to play. We would love it to be reduced, and that would involve everything that we have been talking about—new renewable technologies and new nuclear—but it is important to stress that we will not turn the taps off tomorrow. Gas will play a pivotal, central role in meeting the UK's heating and power-generation needs in the immediate future.

**Fiona Hyslop:** You said that electricity market arrangements are not glamorous, but I agree that they are essential. Will you set out what you see as the key risks to infrastructure investment of the current electricity market arrangements?

**Andrew Bowie:** Sorry—are you speaking about investment?

**Fiona Hyslop:** Clearly, the market for renewables can and will be extensive, but it needs certain decisions to be made, which you are considering just now. If we look at what is happening in the US with the Inflation Reduction Act—IRA—and what is happening in Europe with the green deal, we see that the opportunity that we have could be closing if we do not have the market arrangements that we need. That belies the fact that, underneath that, we know that the current electricity market arrangements are not working to ensure that investment of the necessary scale happens rapidly. What is your assessment of the risks?

14:30

**Andrew Bowie:** There are huge risks. Whereas we welcome the United States moving at pace and at scale to invest in clean, green technologies—we all recognise that the US has a leading role in reducing the world's carbon emissions—the IRA has caused some concern in the United Kingdom and other countries, including the European Union, Korea, Singapore and Japan, which have been leading the way in investment in things such as new renewable technologies. We are in discussions with the US right now as to how we can best respond to that at an international level.

At a domestic level, we are head and shoulders above the US. The reason that it is throwing so much money at the issue—it is welcome that it is taking it seriously—is that it has been underinvesting for the past 10, 15 or 20 years, whereas the UK has been moving forward at pace. The contracts for difference scheme has been transformational, as I said.

The big issue that I am concerned about, in this entire sphere, is grid capacity, connection times

and planning and consenting, all of which are holding up further investment in all those technologies, as things stand. It is all well and good that, off the coast of Great Britain right now, as I have said, we have the first, second, third and fourth-largest wind farms in the world, but, if we cannot get the power from those wind farms into the grid, what is the point of building them in the first place? We have therefore commissioned Nick Winser to deliver an independent review and report, which he will do in June.

I am glad to say that, in March this year, I held a round table with all interested parties, including the Scottish Government, Crown Estate Scotland, distributors, the hydrogen champion, the wind farm champion, National Grid and the electricity system operator—everybody who is in any way involved—and we are all in agreement that we need an overarching plan to develop and modernise the grid to get it ready for the fourfold increase in demand that is going to be put on it in the next few years. However, we are not where we need to be right now—that is absolutely true.

We have also commissioned the holistic network design follow-up exercise, which will work through its processes in the next few months. When Nick Winser's review is published, and when the holistic network design follow-up exercise—which definitely needs a better title—concludes its processes, we will take a view on how best to proceed.

Everybody who is involved at every stage in the process is committed to doing what we can to improve the grid. It is non-negotiable—it is not a nice-to-have. It is not a question of the Government saying, "Well, we should be improving the grid, but we can't." It is not a case of not affording it or not wanting it. We need to do it, because we are going to be turning away from fossil fuels, so there will be a huge increase in demand for electricity and the network is not in any place ready to cope, as it stands right now. That is why we are taking this so seriously.

**Fiona Hyslop:** My next question leads on from that. What are the expected timescales for the completion and implementation of that transmission network systems change and for your review of the electricity market arrangements?

**Andrew Bowie:** Nick Winser's review is due to publish in June. I do not know what his recommendations will be—the review is wholly independent—but we will then take a view and will move very quickly. We cannot just park it and come back to it. As I have said, there will be a fourfold increase in the next five or 10 years, so we need to act now—and we will, when it comes to his recommendations.

What is the timescale for the HND exercise, Jeremy?

**Jeremy Allen:** I will check that. We want to work at pace. In a sense, we have already started. Following the HND last year, the regulator is working with transmission network operators to identify projects that may be accelerated. About £20 billion of network investment is being accelerated to meet the HND aspiration of being more efficient and having quicker consenting and connection. The process is starting and, where Nick Winser or the HND follow-up suggests sensible ways forward, ministers will want to act as quickly as possible, I think.

**Andrew Bowie:** Absolutely. Of course, Ofgem has a role to play as well when it comes to connection times and how we reform the queue procedure. Farcically, generators have to pay to come off the waiting list, so the system is clogged up by people who may not want to deliver or who do not have any plans to develop in the near future—preventing those who have plans and who are ready to plug in. We need to address all of that, and that is what we will do over the summer, as soon as Nick Winser's review is published and the HND follow-up exercise is completed.

**Fiona Hyslop:** I want to press you on your decision making. Once you have the recommendations, what do you see as being a successful timescale for making decisions that will make a difference? The risks are very high.

**Andrew Bowie:** For fear of stepping outside my brief, and because it will be more than just me making those decisions, I will say that I would press for it being as soon as is physically possible.

**Fiona Hyslop:** On the risks of not being prompt in accelerating all the decision making, you talked about a number of issues. The committee has acknowledged that we will pursue planning consents with our minister. However, on SMEs and supply chains, if the markets are really opening up—for good reason—in the US and the EU, in particular, we must make sure that we have people with the right skills. It is not just about infrastructure. Do you acknowledge that?

**Andrew Bowie:** Absolutely. That is why I said that it is a global risk. There is a small pool of highly skilled individuals across the world, and every country is chasing them to develop new energy technologies.

I was at the green trade and investment expo in Gateshead, in the north of England, in October last year, and it was genuinely mind blowing to see the sheer scale of UK-based technologies, innovation and ambition in the green technology sphere. If we are going to retain that in the UK, it is absolutely essential that we invest not only in those technologies and in the grid but in training

up the workforce in the UK, so that we have a pool of talent that ensures that we continue to develop and scale up those technologies, which are, frankly, world leading.

In Brazil, there is a company that will be the first-ever glass recycling deliverer there because of the technology that it has been able to develop to make it workable in that country. It is stuff like that that we can be proud of developing in the UK. We will not do that unless we invest in skills, so working with the Department for Education, the Department for Work and Pensions and the devolved Administrations in Wales and Scotland on a whole piece around how we develop those skills is central to what I want to achieve—if I am to achieve anything—by the time that I leave this job.

**Fiona Hyslop:** I will not refer to that.

**Andrew Bowie:** I hope that that will not be for some time.

**Fiona Hyslop:** You walked into that, minister.

The issue of competitive advantage is key. We have world-leading skills and experience. Scotland has fantastic renewables opportunities in terms of the power that can be generated from the wind, although it is not being serviced properly by the grid. However, one thing that will not be competitive is transmission charges for the generators. When we know that we face increasing competition coming at us from elsewhere, we have to take advantage of the window of opportunity, but uncompetitive transmission charges for our generators are a real disincentive to investment. What can be done about that? What has been done more recently? Do you recognise that the generation of renewable energy in Scotland is at a severe disadvantage to that elsewhere in the UK and the rest of Europe?

**Andrew Bowie:** I do not fully accept that. Transmission charges are higher in Scotland because of its challenging geography and the effort that it takes to deliver electricity across it. If we were to reduce transmission charges, the industry and Ofgem would argue that that would pass a higher burden on to consumers, and, as things are right now, consumers on the whole, although not exclusively, pay a lower transmission charge in Scotland than they pay in other parts of the UK. I therefore do not accept that argument in its entirety.

When there are disincentives to further investment, we will do what we can to resolve that. That is primarily a role for Ofgem. I know that it appeared before the committee a few weeks ago, so I am aware that it is aware that it has work to do on that, and I would not like to prejudge that work. However, I do not know that there is as much of a disincentive as you say there is, given

the speed and skill with which renewable energy has been invested in in the UK up to this point.

**Fiona Hyslop:** My final question is: what impact will the establishment of the future systems operator have on whole energy systems planning? Will the FSO provide certainty about what, where and when the infrastructure needs to be built? You use the term “we” quite a lot, but it is actually private companies that are going to invest the billions of pounds. What can the establishment of the FSO do to provide certainty to enable businesses to invest?

**Andrew Bowie:** To address your point about using the term “we,” I am talking about team UK when I say that. When we sat around the table with private industry, the ESO, National Grid, the Crown Estate, Crown Estate Scotland and the devolved Administrations—in Scotland, Wales and Northern Ireland—it was clear that we were all on one team regarding where we want to go. So, when I say “we”, I mean it in that regard.

We are in the process of establishing the FSO, and the regulatory framework for it is in the bill—which again proves the need to get the bill on the statute book as quickly as possible. We are still looking for the FSO to be up and running in the first half of 2024. There are significant challenges with that, but we are determined to overcome them. It will be central to delivering the overall plan for investment in the grid across GB. It is going to be the focal point and the lead from which everything will stem. That is why it is important that we set it up.

I have to say that National Grid ESO has been incredibly willing, forthcoming and instrumental in getting us to where we are now. We are at the stage of discussing contracts and pensions—the process is that advanced. The FSO is coming soon, and it will be pivotal to what we are trying to achieve.

**The Convener:** Before we leave the topic, I want to make it abundantly clear, as I have done in previous meetings, that as a farmer, I have transmission lines across my land—I have 11KV lines, 33KV lines and I am in negotiation with regard to a 132KV transmission line—so I have an interest in them.

However, I was interested in what you have highlighted with regard to the scale of power line building that we will have to do to meet our requirements. In the Highlands, there is an outcry at the moment about the latest lines that are coming through and the incredibly poor negotiation between Scottish and Southern Electricity Networks and the people on the ground. Do you think that work needs to be done to ensure that people understand the need for the lines, and do you think there is a better way of doing this than

power companies simply using compulsory powers to go in and place the lines without proper consultation?

**Andrew Bowie:** That is a difficult one, because we need the infrastructure to be built across the whole of Great Britain if we are to reach the targets that we have set. However, it is absolutely essential that we take the public with us on this journey—indeed, I have been saying that since day 1.

Everybody out there, in the round, accepts or even supports the need for the country to get to net zero, but I do not think that we—and by we, I now mean the UK Government, the Scottish Government and industry—have explained to people exactly what that will mean. By that, I mean what getting to net zero and moving away from fossil-fuel based energy will mean for energy transmission networks, investment in the grid and the deployment, at scale, of the infrastructure that we are going to need.

It is far outwith my remit, so I cannot speak to planning in Scotland, and this particular line is for SSEN, working with Ofgem, to engage with local communities on. However, in the same way that we are approaching onshore wind south of the border, we need to bring communities with us where the investments will take place.

As the UK Minister for Nuclear and Networks, the developments at scale that we will have to see in parts of East Anglia do fall into my remit. Right now, a huge volume of work is being done by the companies involved in that development, local communities and local members of Parliament to engage with communities on the community benefits that might result. We have launched a consultation on the community benefits from the investment and infrastructure that we will need, to see what we can do for communities that might be adversely impacted by the infrastructure that we will have to build—and it has been acknowledged that we have to build it. However, I really cannot get involved in the detail of the Spittal to Beaulieu issue right now.

**The Convener:** I am not asking about that. I am asking about the general issue of taking people with us on the net zero journey and making sure that all involved buy in to the consultation. It cannot be too heavy handed.

**Andrew Bowie:** Absolutely—it cannot be. I completely agree.

14:45

**The Convener:** As you have mentioned, minister, we have discussed this matter with Ofgem, and one of the questions raised by others is whether its statutory duty should include the

wording “achieving net zero”. Ofgem said that it did not need that, while other people said that it did. Do you have a view?

**Andrew Bowie:** Do I have a view? You will not be surprised to hear, convener, that the issue has been discussed at length within my office, not least because there was an amendment to the Energy Bill in the House of Lords last week that would have inserted that wording into the bill. The issue is being discussed within Government right now. As it stands at the moment, we do not believe that Ofgem should have a statutory duty to include net zero in its remit; however, we are looking at the amendments that were tabled in the Lords and Government is discussing a way forward as we speak.

**The Convener:** I will push you a wee bit on that. If you do not believe that the wording is needed, do you believe that Ofgem is doing that? Indeed, will you direct it to do that, even if it does not appear in the wording of its remit?

**Andrew Bowie:** I do not want to prejudge discussions that are going on elsewhere in Government right now. All that I can say is that we opposed the amendment that was tabled in the House of Lords. However, we are discussing how Ofgem can best support our move to net zero.

**The Convener:** I guess that it is an on-going situation.

**Andrew Bowie:** Yes.

**The Convener:** We will have to monitor that.

Liam, did you want to come back in?

**Liam Kerr:** Yes. Thank you, convener.

I will be very brief. I thought that the deputy convener's points with regard to concerns about grid connections were well made, and I want to follow up on—or clarify—a point in relation to that. On grid connections and the ability to get into the grid, you answered the deputy convener by referring to a review by Nick Winsor. It has been suggested to the committee that the larger generation companies could, in theory, make a speculative application for grid capacity and then almost bank that connection. Do you recognise that as being possible or, indeed, as happening? In any event, what will the UK Government do to ensure that SMEs or the more innovative companies looking for such connections can definitely get access?

**Andrew Bowie:** Yes, it is possible and yes, it is happening. It is part of the Winsor review and we will be acting on his recommendations when it is published. It is essential that there is no blockage in the system as a result of actors who, some

might suggest, might be doing what they are doing in bad faith.

**Liam Kerr:** I am grateful.

**The Convener:** Before I come to Maggie Chapman, I should say that the clerk has reminded me that, in my original declaration, I reminded everyone about the power lines going through my farm. Of course, we receive a standard wayleave payment for that, as does everyone else, so there are payments involved. I should say, Jackie Dunbar, that they are not very much, in case you were worried that they were bigger than you had imagined—they are not.

Maggie Chapman, you wanted to ask some questions.

**Maggie Chapman (North East Scotland) (Green):** Thank you very much, convener, and thank you for letting me come to this afternoon's meeting. Good afternoon to the panel and thank you for being here.

I appreciate what Andrew Bowie has already said about the UK Energy Bill that is going through Parliament and the several reviews that are ongoing and have yet to report. I know that the timescales are various and things are forthcoming, so there will be some limit to what you can say in some of your answers to these questions.

You referenced the Scottish Government's draft energy strategy and just transition plan. You will be aware of the very clear commitment to maximising community benefit within that, in relation not only to renewable energy developments but also—as we have heard—to localising transmission and distribution, connectivity, shared ownership and all of that. Given what you have already said this afternoon, and following on from Fiona Hyslop's questions around the FSO, how do you see the FSO's role in facilitating those kinds of community benefits in a material way, particularly for rural communities?

**Andrew Bowie:** The FSO is being developed as we speak. Although I have spoken in the round about what we want it to do, its remit in specific areas such as the one that you are asking about will be for the discussions that will be had as we develop it over the next few months.

I do not know whether Jeremy Allen wants to say more on that.

**Jeremy Allen:** We would look to the FSO to provide strategic direction for a system that is net zero, secure and low cost. As for more specifics on community benefit, we will have to see as the organisation gets up and running.

At the moment, ministers would look to the network operators working in the regulatory framework to take account of the factors that I

have mentioned, hence the consultation that the minister mentioned on networks. In England, we have launched consultations on community benefit for onshore wind, and it is a topic that we would expect market participants to address through the regulatory framework as it stands or via the various consultations that we support to get technologies deployed.

**Andrew Bowie:** You made a comment, Ms Chapman, about there being some questions to which I cannot give a full answer right now because reviews, investigations or consultations are on-going and the Energy Bill is still moving through its stages in the house. I would be keen to come back when I have the opportunity to give fuller answers. The Department for Energy Security and Net Zero was founded only in February, but we have achieved a lot in a short period and a lot is coming in the near future that, I think, will answer many of the questions that the committee has posed. Post-summer, when the Energy Bill is—we hope—on the statute book, I would be happy to come back to the committee.

**Maggie Chapman:** Thank you for that.

Jeremy Allen, you mentioned two avenues: the regulatory frameworks and the consultations. There are opportunities for communities to respond to and influence consultations. Does either of you see any likelihood of a need to adjust the regulatory frameworks? If so, in what directions should they be adjusted?

**Andrew Bowie:** That is a very good question.

**Jeremy Allen:** We would await the outcome of consultations to see what the evidence tells us is the appropriate way. We would not want to pre-empt that process.

**Maggie Chapman:** I appreciate that it is early days.

**Andrew Bowie:** It is unfortunate. I apologise.

**Maggie Chapman:** I am not trying to be awkward. Others round the table might think that I am—it is just my nature.

One of the key challenges about which we have talked, about which the committee has heard and about which we hear often is problems with the resilience of grid connections. You will be familiar with some of the resilience issues and failures during storm Arwen and other similar events. What are the opportunities in the body of work that we are talking about, whether legislation or reviews, to think outside the box—or beyond the grid—so that we can have local, community-owned, resilient energy supplies that are not dependent on infrastructure that might be several tens of miles away or controlled several hundreds of miles away? How do we build resilience into an energy system—in particular, the electricity system—that

is not only net zero but fit for the future and is not subject to grid failures?

**Andrew Bowie:** That is a great question, Ms Chapman. You might have pre-empted the answer but it would be remiss of us not to acknowledge the huge work that SSEN in particular has put in post storm Arwen to ensure that the grid is more robust, more resilient and future proofed.

In the storms that came in the immediate aftermath of Arwen, we did not see the failure that we saw during Arwen. Indeed, last winter, despite some inclement weather at some points, we did not see the failures that we saw the previous year. Speaking as a local constituency MP, I know that the engagement that SSEN has had with local communities has been far and away above what went before. Therefore, we should acknowledge the work that SSEN has done to make things more resilient.

**Maggie Chapman:** Absolutely.

**Andrew Bowie:** The matter is also subject to review, consultation and the Energy Bill process. The party of Government in the UK has had support for locally owned energy in every manifesto since 2010, and we want to go further. We are absolutely sympathetic to what you suggest, but I would like the processes that I have mentioned to work their way through before we take any decisions on how we might best be able to implement that commitment.

**Maggie Chapman:** One of the key arguments for not seeing resilience as a nice add-on at the end of the process is that it might do away with the need to address some of the other issues that we have been talking about. Having islands or rural communities that are self-sufficient in energy terms means that we do not need to worry about some of the broader issues around transmission and distribution, because it is all right there. I am not necessarily seeing that kind of strategic thinking about off-grid—that might be the wrong phrase; perhaps I should say “beyond-grid”—supply, distribution, transmission and use.

**Andrew Bowie:** That is a very good point. If you are not seeing that, perhaps you should be, so I will take that point away. As well as writing to Ms Regan, I might write to you in relation to what we intend to do on that point, because we are sympathetic to it.

**Maggie Chapman:** That would be very helpful.

**The Convener:** I would remind you to write to the committee, Mr Bowie, if you are going to write in. We will ensure that your response is distributed to Maggie Chapman, who, technically, is not part of the committee. The committee would certainly be grateful to have the answers.

I think that the deputy convener has more questions.

**Fiona Hyslop:** I have a few follow-up questions. I am interested in the localisation and decentralisation aspects, too. We have heard from stakeholders who are innovators that diversity needs flexibility, and more localised grid connections could make a big difference in that area.

Secondly, if we consider green hydrogen and big industrial plants—for example, cement plants or big industry users—the distribution aspect, whether off grid or on a different grid, will be key, too, not least given the geography of Scotland.

Thirdly, we have talked about community benefit, but community value would be more immediate and direct access to reliable and affordable renewable green energy.

To what extent, and how, does any of what you have talked about today address those issues?

**Andrew Bowie:** I hope that just about everything that we have talked about today will help address, maybe not the specific issues, but the issues in the round faced by those in rural communities who are—what was your phrase, again, Ms Chapman?

**Maggie Chapman:** Beyond grid.

**Andrew Bowie:** Beyond grid. That is good—we will use that.

Nick Winser’s review is on-going, and many consultations out there have still to report back to Government, to which we will have a response. In relation to what specifically we are doing, I have already promised to write through the convener to Ms Chapman—a copy of that letter will be available for you to see, Ms Hyslop—and I am happy to engage in, and work with, the committee and, indeed, other parties to see what more we can do. I am sure that there will be a whole element of devolved responsibility to consider, too, especially with regard to planning and consent et cetera, so I am keen to engage.

**Fiona Hyslop:** I have another follow-up question. You said that the UK Government had rejected the proposition in the House of Lords to give Ofgem a statutory responsibility to achieve net zero. Given that decarbonising energy is essential to achieving net zero—and that achieving net zero is essential to tackling climate change—why would you not? It would be quite helpful if you could give us, on the record, your rationale for currently rejecting that amendment.

**Andrew Bowie:** The rationale for being opposed to that amendment is that we would not want to do anything that would dilute or distract from Ofgem’s primary role, which is to act on

behalf of the consumer—that is its number 1 statutory duty. That is the argument for not diluting that role by including a duty on net zero and the rationale for opposing the amendment, which continues to be the Government's position. However, I pledge to you that discussions are ongoing on how we support Ofgem's ability to act in support of our net zero ambitions, which will include Ofgem's allowing companies to make anticipatory investment in various fields to ensure that we can deploy, for example, offshore wind at the scale that we need to.

**Fiona Hyslop:** So, it becomes an argument whether it is in the interests of consumers to have renewable energy—full stop.

**Andrew Bowie:** Ofgem does have a duty to consumers of the future. I do not want to put words in its mouth, but if Ofgem were sitting in front of you, which I know that it has in the recent past, it might argue that, from its perspective, such a duty would include or might cover the net zero duty. However, as I have said, this is a very live issue in Government right now and is being discussed, and we will have to have a response to the amendment that was tabled in the Lords when it comes to Commons.

15:00

**Fiona Hyslop:** Finally—

**The Convener:** This is pushing it.

**Fiona Hyslop:** It is in the committee's interests, convener.

The Energy Bill is important, but there are obviously issues with it, and I am pleased to hear that you have been talking with different stakeholders separately or together with the Scottish Government. The committee has looked at the bill and has produced a report on it and the legislative consent memorandum.

One of our concerns, which we have also reflected here today, was about the importance of investment in infrastructure, especially the speed of decision making and deployment of that investment. In paragraph 71 of our report on the bill and the LCM, we talk about the combination of the Energy Bill and the Levelling-up and Regeneration Bill giving powers to the environment secretary to make decisions. The Secretary of State for Environment, Food and Rural Affairs is a UK minister, but environment itself is devolved. We are therefore concerned that the

“overlapping matrix of rules, obligations and permissions”

could have a “chilling” impact on investment, which none of us would want to happen. I do not know whether this is your direct responsibility or

whether it is a subject for today's discussions, but is that on your radar? After all, it is in everybody's interests that decisions are made promptly and securely.

**Andrew Bowie:** It is very much on our radar. I cannot speak to the specifics, because of the confidentiality of intergovernmental discussions, which you will know about from your own experience.

However, as I have said, it is very much on the radar. We do not want to do anything in the bill or elsewhere that will slow down approvals and the consenting process for developing or investing in the technologies that we need at the scale and pace that we need. If anything in the bill seeks to delay the approvals process, we will look to improve it. I should also say that nothing in the bill as it stands seeks to take any powers away from Scottish Government ministers in wholly devolved areas where they have responsibility.

**Fiona Hyslop:** We are suggesting that seeking consent with regard to devolved areas instead of just consulting would make a big difference.

**Andrew Bowie:** As I have said, these are live and on-going discussions.

**Fiona Hyslop:** That is fine. Thank you.

**The Convener:** Those questions were slightly outwith the remit of today's meeting, deputy convener, but I gave you a bit of leeway.

There are no further questions, so I will just make an observation. As we in Scotland move forward with our energy ambitions, I see that across Great Britain 32 per cent of the power comes from wind and 5.9 per cent from solar—obviously that is not hugely relevant up here, where we still rely on gas and a base load of nuclear from the UK or the French. We want to use renewable energy where we can, but we also want to be sure in our minds that the plans include having a base load that we can use if and when we need it across the UK.

**Andrew Bowie:** Yes, they do. As I have said, the UK base load will in the future be made up of a mix of different industries—we cannot be in the position of being wholly reliant on one. As a result predominantly of Vladimir Putin's action in Ukraine, we have seen what happens when we are overly reliant on one source of energy. The price of energy is left at the behest of international markets, which is what happened with gas this winter, and which is why the UK Government had to spend £1,500 per person mitigating the effects of high energy bills. A wide range of energy technologies will be required to create a wide energy base load so that we are never again at the whim of international markets through the winter. That includes everything that we have

spoken about today as well as—and you would expect me to say this as the UK's first minister for nuclear—a new nuclear future for this country.

**The Convener:** And it will include the ability to transmit it to where it is needed.

**Andrew Bowie:** Absolutely—100 per cent. The grid, connectivity, transmission and networks present a huge challenge that nobody underestimates. What is good is that the UK Government, Scottish Government, industry and all interested and involved bodies all acknowledge the work that needs to be done, the investment that we need to make and the speed with which we will have to develop the grid if we are going to meet our targets, as we have to.

**The Convener:** Those are all the questions that we have. Thank you for coming up here, minister. I know that you do not need any excuse to get closer to your home patch—for lack of a better description—but it is good to see you, to hear your answering questions that you might not have thought you were going to have to answer and to hear you doing so with openness. I appreciate your giving us your time, and I look forward to receiving correspondence on the areas on which you have undertaken to write to us. Our clerks will remind you of those areas after the meeting.

That is all that we have for you—thank you for your time. The committee will now go into private session.

15:05

*Meeting continued in private until 15:21.*



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